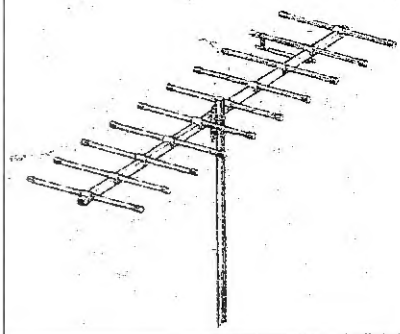
# STINGER A1-1/4-10

# FINCO STINGER AMATEUR BAND RADIO ANTENNA INSTRUCTION MANUAL



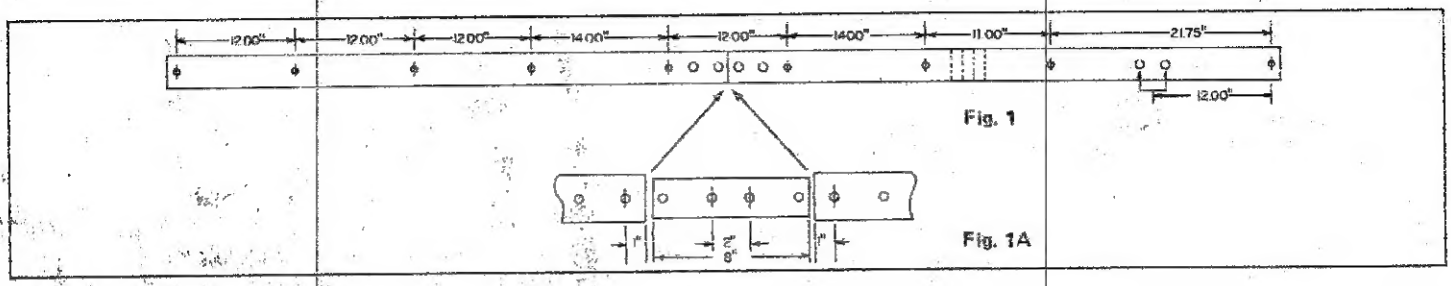



Fig. 1




Fig. 1A

## DESCRIPTION

The model Stinger A1-1/4-10 is a 10 element 1-1/4 meter (220 MHz) high performance yagi antenna designed for all 200 MHz communication needs. Designed to be mounted in either the vertical or horizontal plane, the A1-1/4-10 is adaptable for OSCAR, repeater, or general communication work. Incorporating the Stinger heavy duty elements, boom and boom to mast assemblies, the antenna easily withstands 120 mph wind loads under 1/4" ice conditions. A low loss gamma matching system assures a low V.S.W.R. and is power rated at 1,000 watts.

## WARNING!

**The following steps will include assembly and installation. Survey your installation site NOW to preclude your antenna or support from coming into contact with overhead powerlines. FAILURE TO EXERCISE THIS CAUTION CAN CAUSE ELECTROCUTION.**

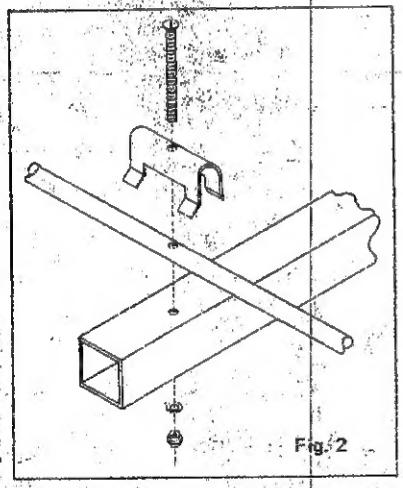


Fig. 2

## SPECIFICATIONS

| ELECTRICAL | | MECHANICAL | |
|---|---|---|---|
| Forward Gain | 13.8 dB | Boom Length | 8 ft. |
| Front to Back Ratio | 25 dB | Longest Element | 28 in. |
| V.S.W.R. (at resonance) | 1.2:1 | Turning Radius | 4.3 ft. |
| Half Power Beam Width | 40° | Maximum Surface Area | 1.32 sq. ft. |
| Bandwidth | 220 to 226 MHz | Wind Load at 80 mph | 17.9 lbs. |
| Impedance | 50 ohms | Weight | 8 lbs. |
| Matching System | Adjustable Gamma | | |

## ASSEMBLY

**BOOM ASSEMBLY** – Referring to Figure 1, select the 56" and 57" pieces of square boom stock. Locate the 8" x 1-1/8" round boom splice.

**NOTE:** that one end of the two pieces of boom material, the dimension from the end of the boom to the center of the first hole, is 1" (Fig. 1A). These ends will be the splice joint ends.

Assemble the two pieces of boom using the 8" x 1-1/8" round splice joint, being sure to align the holes, fasten the splice using 1/4-20 x 1-3/4" hex head bolts, 1/4" lockwashers, and 1/4-20 hex nuts. Securely tighten the hardware.

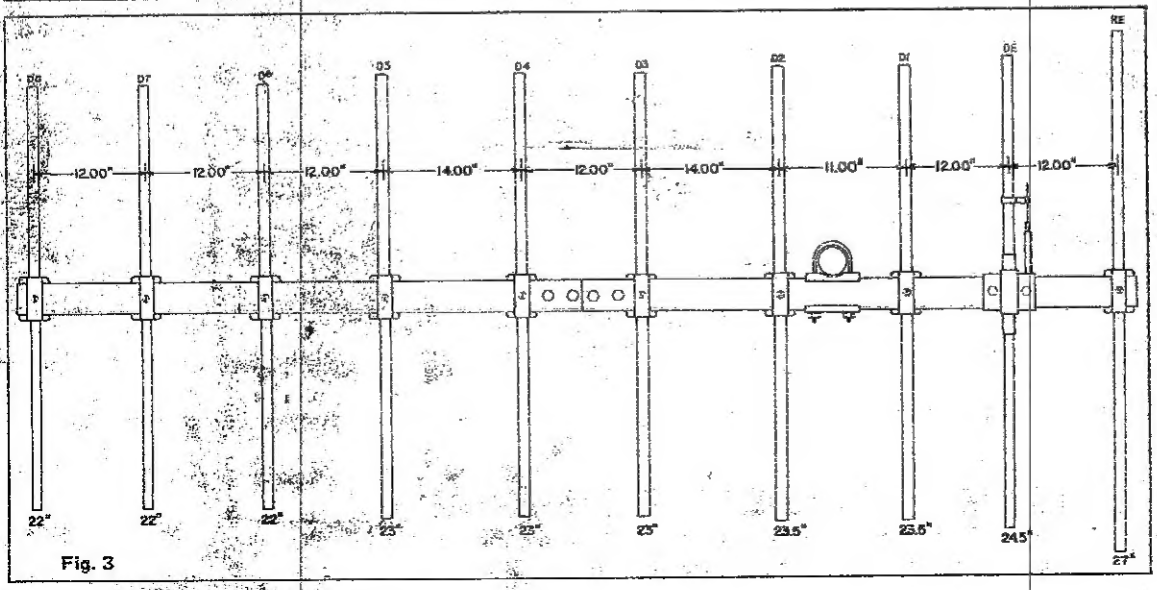



Fig. 3

**ELEMENT TO BOOM ASSEMBLY** – Referring to Figure 2 and 3 for element placement and position, assemble the reflector (RE) and directors (D1, D2, D3, D4, D5, D6, D7 and D8) as shown. Use the element mounting bracket, a 10-32 x 2-1/4" round head machine screw, #10 internal tooth lockwasher, and 10-32 hex nut for each element. Securely tighten the hardware.

As shown in Figure 4, locate the 1/2" O.D. x 24-1/2" driven element with pre-assembled "element to boom bracket". Mount the driven element (DE) and gamma arm bracket to the boom using two 1/4-20 x 1-3/4" hex head bolts, 1/4" lockwashers

and 1/4-20 hex nuts. Securely tighten the hardware.

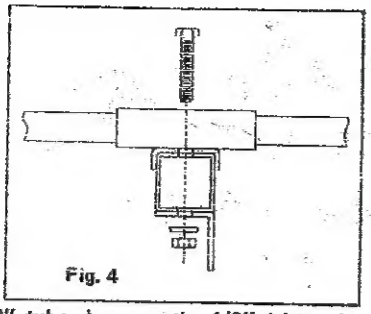


Fig. 4

**GAMMA MATCH ASSEMBLY** – Locate the gamma arm assembly. Securely fasten the threaded connector end using the 5/8" I.D. internal tooth lockwasher and 5/8-24 hex nut to the gamma arm bracket. Locate the 1/4" rod clamp and the 1/2" tube clamp. Referring to Figure 5, place the 1/4" rod clamp on the 1/4" rod on the gamma arm assembly and the 1/2" tube clamp on the 1/2" driven element (DE) in the location shown in Figure 5.

Locate the 3/8" x 2-1/8" shorting strap and, using 8-32 x 1/2" slotted screws, # 8 external tooth lockwashers and 8-32 hex nuts, assemble the shorting strap to the two clamps. Slide the gamma rod to the 1-7/8" measurement shown in Figure 5. Adjust the 1/2" tube clamp to the 4-1/2" measurement as shown in Figure 5 and tighten the hardware on the 1/2" tube. Then tighten the hardware on the 1/4" rod.

**NOTE:** This adjustment is critical for proper performance. After installation, if you so desire, you may peak the gamma matching system for best V.S.W.R at your site location. However, the above pre-tested factory measurements generally will give the lowest V.S.W.R. and best match to 50 ohm coaxial cable.

**FINAL ASSEMBLY** – Loosely assemble the "U-Bolt" and saddle assembly, referring to Figure 6.

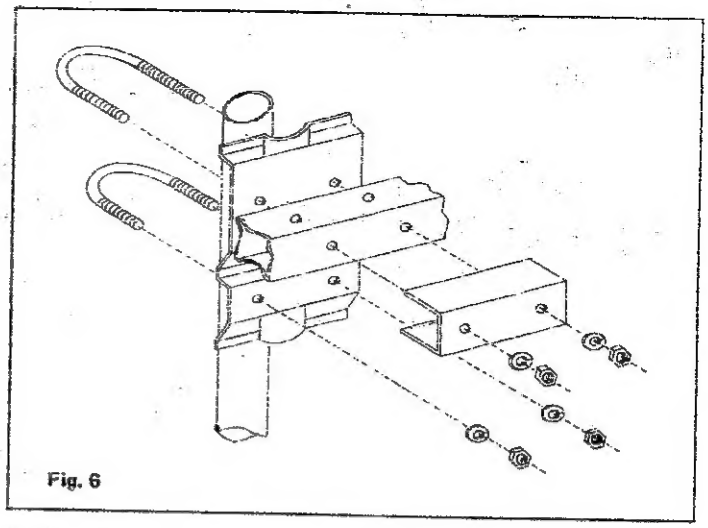


Fig. 6

**NOTE:** There are two sets of boom holes allowing either vertical or horizontal mounting. Mount the supporting mast to the antenna and tighten the hardware.

Install the 1/2" end caps on the ends of each element, and the two boom end caps.

This completes the assembly of your FINCO STINGER A1-1/4-10.

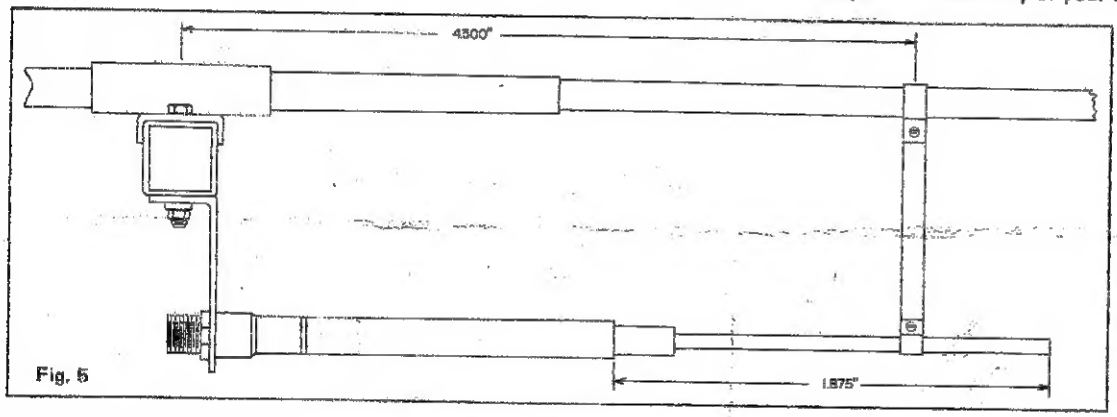


Fig. 5

# INSTALLATION

Before installing the antenna on the supporting structure, attach the coax feed line to the gamma arm. It is recommended that you weatherproof this connection with Neoprene or similar rubber compound substance. This will prevent moisture from deteriorating your antenna's performance. Install your antenna keeping in mind the warning on the front page.

## MODEL STINGER A1-1/4-10 PARTS LIST

| Qty. | Description | Part No. |
|---|---|---|
| 1 | 57" x 1-1/4" Square Boom Stock | 67232 |
| 1 | 56" x 1-1/4" Square Boom Stock | 67233 |
| 1 | 8" x 1-1/8" Round Splice Joint | 69620 |
| 1 | 1/2" O.D. x 24-1/2" Element with Boom Bracket | 68732 |
| 1 | 1/2" O.D. x 27" Element | 68917 |
| 2 | 1/2" O.D. x 23-1/2" Element | 68918 |
| 3 | 1/2" O.D. x 23" Element | 68919 |
| 3 | 1/2" O.D. x 22" Element | 68920 |
| 1 | Gamma Arm Assembly | 10106 |
| 1 | Gamma Arm Mounting Bracket | 23204 |
| 1 | 2-1/8" Gamma Arm Shorting Strap | 41201 |
| 1 | Boom to Mast Mounting Plate | 23001 |
| 1 | Back-up Plate | 23002 |
| 1 | 2-3/4" Long "U" Bolt | 13400 |
| 1 | 4" Long "U" Bolt | 13401 |
| 1 | 1/4" Rod Clamp | 21908 |
| 1 | 1/2" Tube Clamp | 21971 |

| Qty. | Description | Part No. |
|---|---|---|
| 9 | 1/2" Element Mounting Bracket | 10200 |
| 4 | 5/16" Lockwashers (for U-Bolts) | 20102 |
| 4 | 5/16-18 Hex Nuts (for U-Bolts) | 30102 |
| 1 | 5/8" I.D. Internal Tooth Lockwasher | 20085 |
| 1 | 5/8-24 Hex Nut | 13402 |
| 2 | 8-32 x 1/2" Long Slotted Pan Head Screw | 10701 |
| 2 | #8 External Tooth Lockwashers | 20100 |
| 2 | 8-32 Hex Nut | 30100 |
| 6 | 1/4-20 x 1-3/4" Hex Head Bolt | 10001 |
| 6 | 1/4" Lockwashers | 20101 |
| 6 | 1/4-20 Hex Nut | 30101 |
| 9 | 10-32 x 2-1/2" Long Round Head Machine Screw | 10722 |
| 9 | #10 Internal Tooth Lockwashers | 20099 |
| 9 | 10-32 Hex Nuts | 30103 |
| 20 | 1/2" Element End Caps | 24603 |
| 2 | Boom End Caps | 24561 |

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